

WHAT IS CLAIMED IS:

- 1 1. A method for measuring vibration of an object having a pair
2 of substantially coplanar, spaced-apart marks, the method comprising:
3 providing calibration data based on a correlation of a change in
4 distance between the spaced-apart marks in a detector plane substantially parallel to
5 the spaced-apart marks to physical movement of the object including the spaced-
6 apart marks;
7 generating a plurality of images including the spaced-apart marks
8 from signals reflected from the object in the detector plane;
9 measuring energy in the images in the detector plane to produce a
10 plurality of signals; and
11 processing the plurality of signals with the calibration data to obtain
12 a vibration measurement of the object.
- 1 2. The method of claim 1, wherein the spaced-apart marks are
2 part of the object.
- 1 3. The method of claim 1, further comprising the step of marking
2 the object with the spaced-apart marks.
- 1 4. The method of claim 1, wherein the signals reflected from the
2 object are light signals and wherein the energy in the images in the detector plane
3 is radiant energy.
- 1 5. The method of claim 1, wherein the spaced-apart marks are
2 parallel lines.
- 1 6. The method of claim 1, wherein the spaced-apart marks are
2 parts of a single line.
- 1 7. The method of claim 6, wherein the single line is a curved
2 line.

1 8. The method of claim 7, wherein the curved line is a sine or
2 cosine curve.

1 9. The method of claim 1, wherein the spaced-apart marks are
2 parts of separate lines.

1 10. A system for measuring vibration of an object having a pair
2 of substantially coplanar, spaced-apart marks, the system comprising:
3 means for generating an image including the spaced-apart marks in
4 a detector plane substantially parallel to the spaced-apart marks;
5 means for storing calibration data based on a correlation of a change
6 in distance between the spaced-apart marks in the detector plane to physical
7 movement of the object including the spaced-apart marks;
8 means for generating a plurality of images including the spaced-apart
9 marks from signals reflected from the object in the detector plane substantially
10 parallel to the spaced-apart marks;
11 at least one detector for measuring energy in the images in the
12 detector plane to produce a plurality of signals; and
13 a signal processor for processing the plurality of signals with the
14 calibration data to obtain a vibration measurement of the object.

1 11. The system as claimed in claim 10, further comprising a
2 marker for marking the object with the pair of substantially coplanar, spaced-apart
3 marks.

1 12. The system as claimed in claim 10, wherein the substantially
2 coplanar, spaced-apart marks are part of the object.

1 13. The system as claimed in claim 10, wherein the signals
2 reflected from the object are light signals and wherein the at least one detector
3 comprises an array of photodetectors.

1 14. The system as claimed in claim 13, wherein the array of
2 photodetectors include a video camera.

1 15. The system as claimed in claim 10, wherein the spaced-apart
2 marks are parallel lines.

1 16. The system as claimed in claim 10, wherein the spaced-apart
2 marks are parts of a single line.

1 17. The system as claimed in claim 16, wherein the single line is
2 a curved line.

1 18. The system as claimed in claim 10, wherein the spaced-apart
2 marks are parts of separate lines.

1 19. The system as claimed in claim 17, wherein the curved line
2 is a sine or cosine curve.